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ABSTRACT

A study assessed the need for technology programs in Grant County, Indiana. After compiling background data (population projections for the region, the educational level of adults living in the region, and the number and size of firms located in the area), concerning Grant County and the counties surrounding it, the researchers formulated projected requirements for engineering technicians, computer programmers, and supervisors in the area. Next, these projections were corroborated through interviews with representatives of local industries and appropriate agencies and by comparing the local projections with national employment projections for the same occupations. As a result of an analysis of these data the following actions were recommended: authorization to implement a two-year supervision technology associate degree program in the city of Marion, provision of related adult continuing education and service courses, formation of a supervision technology advisory committee, and implementation of further labor force and training needs studies and plans. (MN)

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WITH RELATIONSHIPS TO SURROUNDING COUNTIES AND THEIR EDUCATIONAL PROGRAMS

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NEEDS FOR TECHNOLOGY TYPE PROGRAMS IN GRANT COUNTY, INDIANA
(Marion is the Key City)

WITH RELATIONSHIPS TO SURROUNDING COUNTIES AND THEIR EDUCATIONAL PROGRAMS

1. PURPOSE OF THIS REPORT

This manpower report is designed to determine the associate degree (two-year) Technology-type programs needed in Grant County. To make this determination it is necessary to examine the nature of relevant technology-type programs now being offered or planned near-by, particularly in Economic Region 6, of which Grant County is a part. Due to the proximity of the city of Kokomo, which offers technology programs, Howard County is included in this report.

The foundation for justifying a given technology program in a certain locale includes the documentation of annual recurring requirements for its graduates (new hirees) as well as for upgrading or retraining adults now in the work force. When these requirements are corroborated as being substantial by representatives from local industries and organizations, there is reason to proceed with studying other considerations: such as the numbers of qualified students who might attend, support of the local community, availability of resources, etc.

This report should assist administrators and other decision makers as to what should be done in order to meet the demand for newly trained technician-level personnel and to upgrade or retrain adults in the work force in Grant County.

2. BACKGROUND:

A. Demographics: Region 6 and Howard County

The 1980 population of the seven counties making up Economic Region 6 was 471,100; however, it is projected to decrease to 457,200 by the year 2000 (a drop of 3%). This region's drop compares with a projected increase of 6.7% for the population of Indiana during the same period. Howard County, contiguous to Grant, but not a part of Region 6, is expected to grow nearly 4% by the year 2000.

TABLE 1

POPULATION PROJECTIONS
INDIANA, REGION 6, AND HOWARD COUNTY

Place	Population 1980	Population 2000	% Change
INDIANA	5,490,200	5,885,500	+ 6.7%
Region 6	471,100	457,200	- 3.0%
Blackford County	15,500	14,400	- 7.1%
Delaware County	128,600	124,800	- 3.0%
•Grant County	80,900	74,800	- 7.5%•
Henry County	53,400	51,800	- 3.0%
Jay County	25,300	23,000	- 1.3%
Madison County	139,400	137,500	- 1.4%
Randolph County	30,000	30,900	+ 3.0%
Howard County	86,900	90,300	+ 3.9%

Source: Indiana University, Div. of Research, Sch. of Business--and the Indiana State Board of Health.

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The largest cities in Region 6 are Muncie in Delaware County, and Anderson in Madison County. The population of key cities in this region, plus Kokomo, are shown in Table 2.

TABLE 2

POPULATION OF KEY CITIES IN REGION 6
PLUS KOKOMO OF HOWARD COUNTY - 1980

County	Key City in 1980		Rank
	City	Population	
Blackford	Hartford City	7,622	6
Delaware	Muncie	77,216	1
*Grant	Marion	35,874	4
Jay	Portland	7,074	7
Madison	Anderson	64,695	2
Henry	New Castle	20,056	5
Randolph	Winchester	5,659	8
Howard	Kokomo	47,808	3

Of significance to planners of postsecondary education is the fact that there will be fewer people in the younger age groups in the future than there are today. This is true for the nation, for Indiana, for Region 6, and for Grant County. Table 3 shows that in Grant County there is a projected decrease of nearly 11,000 in the number of younger people (through age 34) by the year 2000. However, there will be an Increase of more than 2,000 people in the middle working-age cohort groups (35 to 49). There will also be about 2,600 more poeple aged 65 and older in Grant County by the year 2000.

TABLE 3

GRANT COUNTY
POPULATION AGE STRUCTURE: 1980-2000

Age Groups	Year		Number Change in Population	Percent Change in Population
	1980	2000		
0- 4	5,820	4,590	-1,230	- 21.1%
5- 9	6,380	5,020	-1,360	- 21.3%
10-14	6,950	5,390	-1,560	- 22.5%
15-19	8,160	5,470	-2,690	- 33.0%
20-24	7,420	4,950	-2,470	- 33.3%
25-34	11,630	9,990	-1,640	- 14.1%
35-49	13,520	15,570	+2,050	+ 15.2%
50-64	12,490	12,540	+ 50	+ 0.4%
65+	8,600	11,210	+2,610	+ 30.4%
TOTALS	80,900	74,800	-6,100	- 7.5%

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2. B. Educational Level of Adults

The educational attainment levels of adults in Grant County are below State averages. The proportion of adults who have some high school--but did not graduate--is greater than the State average; the proportions of adults who have 1 to 3 years of college or a bachelors or higher degree are smaller than the State averages. (Indiana's overall educational levels are below the Midwestern Region and National averages.) Unfortunately, evidence indicates that lower educational levels are related to lower wages or salaries, higher unemployment, and slower career progression. See Table 4 for educational level comparisons. The notes following the table are pertinent to this study.

TABLE 4

EDUCATIONAL ATTAINMENT COMPARISONS
ADULTS 25 YEARS AND OLDER (% DISTRIBUTION)
THE U.S., INDIANA AND GRANT COUNTY

	Highest Educational Level Attained						
	Elementary	High School		College			Adult
	0-8	1-3	4	1-3	>4	Totals	Population
United States	18.4%	15.3%	34.4%	15.7%	16.3%	100%	132,775,652
Indiana	16.6%	17.1%	41.7%	12.1%	12.5%	100%	3,135,772
Region 6	17.3%	18.8%	43.4%	9.9%	10.6%	100%	269,178
*Grant	17.1%	20.2%	42.2%	10.7%	9.7%	100%	46,199

Survey Results:
WHY PEOPLE CHOOSE A PARTICULAR COLLEGE
(THE MOST IMPORTANT REASON GIVEN)

RANK ORDER		PERCENT OF RESPONDENTS
1	Offers what I want to study	35.3%
2	Location is near home	21.4
3	Good academic reputation	14.6
4	Low tuition	5.7
5+	All other reasons	23.0
		100.0%

REASONS WHY MORE
HOOSIERS SHOULD CONTINUE THEIR EDUCATION

The higher one's educational level:

1. The lower the unemployment rate
2. The higher the salary/wage
3. The better the career progression
4. The easier to retrain or upgrade
5. The better the chance to take advantage of opportunities

Also, there are intrinsic benefits: e.g., enhance ability to appreciate, maturation of value structure, increase in expressive skills, intellectual development, raise self-confidence, and others.

J.P.L.

2. C. The Workforce in Region 6 and Grant County

Grant County is one of the seven counties in Economic Region 6. This geographic regional area is not particularly useful in determining technical education needs in Grant County, inasmuch as Grant County is not centrally located in Region 6, and it is contiguous to Howard County which is not a part of this region. An examination of employment in this region reveals that Grant County (Marion) is a microcosm of the diversified regional employment. See Table on next page for Region 6 and Grant County employment.

There were more than 140,000 employees in Region 6 working in about 7,900 firms covered by the Indiana Employment Security Division (4th quarter 1982). The largest employment was in the Manufacturing Division which had more than 51,200 employees; this represents more than 36% of all workers in the region. About 11,300 of these worked in manufacturing firms in Grant County. The next largest Division was Service (e.g., Personal, Business, Health, Education, Social Services, and related organizations): almost 35,600 people worked in this Division which represents about 25% of all workers in Region 6. About 6,700 Services workers were in Grant County. The next largest Division was Retail Trade with more than 27,100 employees--all other Divisions were relatively small. It is important to note that employment in Grant County made up about 20% of the total Region 6 employment. See Table 5 for details. The cities of Muncie and Anderson (and Kokomo) have work forces much larger than Marion's.

Also necessary for this study is the relationship between the particular training program needs in Marion and those within reasonable proximity (e.g., 25 to 30 miles). This consideration is dealt with in the next section of this report.

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TABLE 5
EMPLOYMENT IN REGION 6 AND IN GRANT COUNTY (MARION) BY INDUSTRIAL DIVISIONS AND LARGER MAJOR GROUPS*
(4th quarter, 1982)

Industrial Division and Major Groups	S.I.C.** Codes(s)	Region 6 Employees Number	Region 6 Employees Percent	Region 6 Firms Number	Region 6 Firms Percent	Calculated Grant County Employment
• AGRICULTURE	01-09	486	.3%	109	1.4%	92
• MINING	10-14	166	.1%	18	.2%	32
• CONSTRUCTION	15-17	3124	2.2%	732	9.3%	592
• MANUFACTURING	20-39	51224	36.5%	590	7.5%	11321
FOOD PRODUCTS	(20)	(2037)		(42)		(196)
PAPER PRODUCTS	(26)	(2124)		(22)		(503)
PRINTING & PUBLISHING	(27)	(1864)		(81)		(175)
RUBBER & PLASTIC PRODUCTS	(30)	(1850)		(30)		(339)
STONE,CLAY,GLASS & CONCRETE PRODUCTS	(32)	(5808)		(40)		(1713)
PRIMARY METAL INDUSTRIES	(33)	(3422)		(32)		(965)
FABRICATED METAL PRODUCTS	(34)	(6277)		(77)		(2743)
MACHINERY	(35)	(2718)		(133)		(190)
ELECTRICAL & ELECTRONIC MACHINERY	(36)	(16596)		(19)		(3054)
TRANSPORTATION EQUIPMENT	(37)	(6074)		(15)		(524)
• TRANSPORTATION, COMMUNICATION, & UTILITIES	40-49	5555	4.0%	353	4.5%	1061
MOTOR FREIGHT TRANSPORTATION	(42)	(1950)		(229)		(370)
U. S. POSTAL SERVICE	(43)	(1001)		(7)		(190)
COMMUNICATIONS	(48)	(1083)		(42)		(205)
UTILITIES	(49)	(1160)		(34)		(220)
• WHOLESALE TRADE	50,51	4222	3.0%	516	6.5%	801
DURABLE GOODS	(50)	(2276)		(305)		(432)
NONDURABLE GOODS	(51)	(1946)		(211)		(369)
• RETAIL TRADE	52-59	27173	19.3%	2475	31.3%	5154
BUILDING MATERIALS	(52)	(1183)		(178)		(224)
GENERAL MERCHANDIZING	(53)	(3825)		(86)		(725)
FOOD STORES	(54)	(5148)		(256)		(977)
AUTO DEALERS & GAS SERVICE STATIONS	(55)	(2744)		(435)		(520)
APPAREL	(56)	(1182)		(179)		(224)
RESTAURANTS & BARS	(58)	(9160)		(660)		(1737)
• FINANCE, INSURANCE, REAL ESTATE	60-67	4973	3.5%	614	7.8%	943
BANKING	(60)	(2234)		(45)		(424)
CREDIT AGENCIES	(61)	(1051)		(123)		(199)
• SERVICES	70-89	35597	25.3%	2209	28.0%	6752
PERSONAL SERVICES	(72)	(1550)		(265)		(294)
BUSINESS SERVICES	(73)	(1831)		(181)		(348)
HEALTH SERVICES	(80)	(12246)		(625)		(2323)
EDUCATIONAL SERVICES	(82)	(13394)		(63)		(2541)
SOCIAL SERVICES	(83)	(1492)		(78)		(283)
MEMBERSHIP ORGANICATIONS	(86)	(1289)		(178)		(245)
• PUBLIC ADMINISTRATION	91-33	7955	5.7%	285	3.6%	1509
LOCAL	(93)	(5132)		(131)		(973)
STATE	(92)	(1267)		(119)		(240)
FEDERAL	(91)	(1556)		(35)		(295)
• TOTAL ALL DIVISIONS		140515	100.0%	7901	100.0%	26257

*IESD Data: Includes only employment covered by Indiana Employment Security Division.

**Standard Industrial Classification.

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3. INTERRELATIONSHIPS: GEOGRAPHIC AND TECHNICAL PROGRAMS

Normally, when manpower and training requirements for a given county (and its major city) are determined, the economic region in which it is located is also examined. Often, the specific county being studied is in the geographic center of the region and/or it includes a major part of the population or employment of the region. However, this is not the case of Grant County for the following reasons:

1) Grant County is located on the northwest corner of Region 6. However, Grant is contiguous to Howard County (Kokomo) which is not a part of Region 6.
2) Grant is situated immediately north of Madison, where (Anderson is a large key city.
3) The center of Region 6 is Delaware County, where Muncie is a large key city.
4) Grant is not the most populous county, and it has only about 20% of the total industry employees of Region 6.

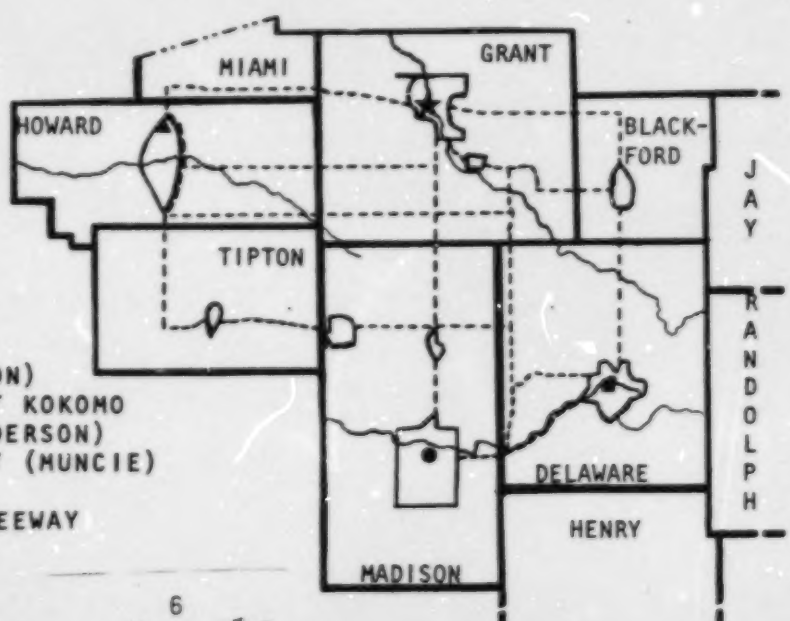
Accordingly, it is important to examine Grant County with regard to its geographic and technical program interrelationships with these neighboring key industrial cities.

A. Geographic

The center of Marion, the key city of Grant County, is between 30 and 40 miles away from three major population/industrial centers, wherein technical manpower programs are either underway or are in an advanced planning stage. The approximate road mileages between these major cities and the location of university-level teaching institutions are shown on the map.

GEOGRAPHICAL INTERRELATIONSHIPS
AMONG GRANT, HOWARD, MADISON & DELAWARE COUNTIES

ROAD MILEAGES
From Marion (in Grant County) to
Kokomo, 30 miles
Anderson, 30 miles
Muncie, 38 miles



B. Technical Programs: Planned or Offered

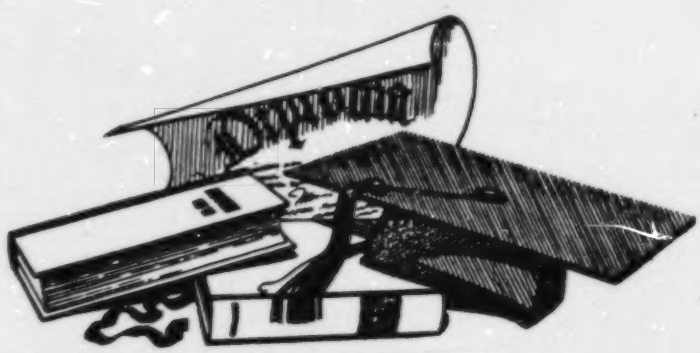
1) Anderson: The Electrical/Electronics Engineering Technology (EET) Two-Year Program has been approved for Anderson by Purdue University's Board of Trustees. It is in process of review by the State Board of Vocational Technical Education and the Indiana Commission for Higher Education (a Purdue Statewide Technology Program Proposal).

2) Kokomo: Purdue University programs now at Indiana University/ Kokomo include 2-year associate degree programs in EET, Mechanical Engineering Technology, and Computer Technology. Under consideration are the B.S. in EET and implementation of a B.S. program in Supervision.

3) Marion: Marion College. No university-level ABET-accredited technology-type programs are being offered.* A variety of industrial technology/vocational-level programs including electrical, machine shop, automation, welding, etc., are being presented by the Tucker Area Vocational Training Center in Marion.

4) Muncie: Ball State University**; 2 year technology programs in Printing Technology and Manufacturing Technology, Cooperative Graphic Arts Management, and Vocational Teacher in Trades and Industry are now being offered.

*Accredited by the Accreditation Board of Engineering and Technology (ABET).
**No programs accredited by ABET.



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4. METHODOLOGY OF COMPUTING TECHNICAL MANPOWER AND PROGRAM NEEDS

A. Manpower Needs

The techniques applied involve the following steps: First, a determination must be made, by Standard Industrial Classification Code (SIC) of all of the various manufacturing and service firms which previous studies have indicated employ persons trained in technical programs. The second step is to make a listing of all the firms by SIC Code and size of employment in Grant County. that were identified in Step 1. The number of employees in each of these SIC manufacturing groups in Region 6 and in Grant County are presented in Table 5 on page 5.

Third, a determination is made of the proportion of employees in these firms that are employed in occupations with skills and qualifications applicable to technology type training programs. These occupational distribution factors come from a National manpower study made by the U. S. Department of Labor which identified every occupation normally found in each type (classification) of industry. The study results are reported in the OES*. The OES report presents the percentage of people in each occupation normally found within each type of industry. For example, a certain percent of a given type of manufacturing firm's employees are made up of specific types of engineers, technicians, clerks, draftsmen, tool and die makers, machinists, etc. By applying these employee percentage factors for each pertinent occupation that are related to technology programs, one can compute the numbers and types of technicians normally employed in each industry. After the proportional number of each type of occupation under study that is employed is determined, the next step is to apply the normal attrition and turnover from that occupation, as well as the anticipated growth in order to calculate the annual recurring requirements for new personnel. Adjustments are made according to recommendations of labor analysts in the State Research and Statistics office, Indiana Employment Security Division, and previous studies.

Finally, the requirement for upgrading and retraining adults now in the work force must be determined. These are critical data because educational programs are justified not only on the basis that there probably are adequate job opportunities for graduates, but also for continuing education for adults, both now and in the future. The next section of this report presents the annual recurring requirements for technical personnel for Grant County for which technology types of training programs are pertinent.

*Occupational Employment Statistics. *Staffing Patterns in the Manufacturing Industries in Indiana: 1977. Research and Statistics Section, Indiana Employment Security Division and U. S. Dept. of Labor, February 1980.*

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B. Program Considerations

After the technical manpower requirements for the county have been calculated, as well as for the economic region in which it is located, it is necessary to review what related programs are being planned or offered within reasonable distances.

C. Review and Corroboration

It is of benefit to involve representatives from local industries and members of appropriate agencies in the review of data, conclusions and recommendations. Letters of support and concurrence are valuable additions to the study. In this regard, the general conclusions and recommendations in this report are endorsed by and supported by representatives from key industries and Marion College. *(See Attachment 1.)*

5. ANNUAL RECURRING REQUIREMENTS FOR ENGINEERING TECHNICIANS COMPUTER PROGRAMMERS AND SUPERVISORS IN GRANT COUNTY

As reported in Section 2C and Table 5, employment data indicate that there are about 11,300 employees in manufacturing firms in Grant County, and 17,000 more in pertinent service and other industries. Applying the methodology described earlier, the computed annual recurring requirements for Grant County are shown in Table 6.

The greatest need is for new Supervisors in all types of industries in order to meet growth, replacement, and turnover needs in Grant County. The computed requirement shows that approximately 100 new supervisors are needed annually (e.g., "First-line" supervisors, foremen or foreladies, office or small business managers, etc.). This number is augmented by a requirement to update or retrain approximately 50 adults now in the workforce (mostly current supervisors) each year. When the coefficient of expansion is applied (estimated increase reflecting employment not covered by the Indiana Employment Security Division), up to a total of 150 new supervisors may be needed each year, plus about 70 more who might need upgrade or retraining. Of course, some of these requirements for new supervisors will be met by new-hirees or current employees (who are not now supervisors) who have an adequate and applicable educational base. However, previous research shows that fully qualified persons make up a small proportion of total needs for new first-line supervisors.

There are other technician needs in Grant County--these include requirements for draftsmen & numerical control tool programmers (computed to be 24 @ year plus 11 upgrade & retraining), electrical & electronics engineering technicians (19 @ year plus 10 upgrade & retraining). These numbers are slightly larger when expanded to the estimated universe. There are lesser requirements for mechanical and industrial engineering technicians and for computer programmers (See Table 6 for details.)

NOTE: Because data indicate the greatest requirement is to help prepare new first-line supervisors and to provide upgrade and retraining for those in the work force, a description of Purdue's Supervision associate degree program is described in the next section. A manufacturing engineering technology program could be designed to meet some of the needs reported for mechanical and industrial engineering technicians, draftsmen and numerical control tool programmers. A local industrial advisory committee is needed.

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TABLE 6

ANNUAL RECURRING REQUIREMENTS
FOR ENGINEERING TECHNICIANS, COMPUTER PROGRAMMERS AND SUPERVISORS
FOR GRANT COUNTY (MARION) WITHIN
MANUFACTURING, SERVICE AND OTHER INDUSTRIES (1982-1985)

Occupation	Employment 1982[1]	Employment 1985[2]	Annual Recurring Needs for New Labor Force Entrants* Expansion[3]	Repl.[4]	Turnover[5]	Base Total	Exp. to Univ[6]	Retraining Up-dating[7]	Retraining Exp. to Univ.[8]	Expanded Grand Total
Electrical/Electronic Engr. Technicians.....	79	119	13	2	4	19	27	10	15	42
Mechanical Engineering Technicians.....	29	50	7	1	2	10	14	4	6	20
Industrial Engineering Technicians.....	6	11	2	--	--	2	3	1	1	4
"Other" Engineering Technicians.....	37	54	6	2	2	10	14	5	7	21
Computer Programmers....	42	58	6	1	2	9	12	6	8	20
Supervisors[7].....	455	650	65	22	20	107	153	50	70	223
Draftsmen & Tool Programmers (Numerical Control)	88	134	15	4	5	24	34	11	16	50

Holders of an associate degree in drafting and those trained in the use of computer-aided drafting systems and electronic drafting equipment have the best career prospects. There will be a lessening demand for tracers & junior drafters.

1/ *Indiana Employment Security Division (IESD) data.*

2/ *IESD data: one-third 1985-1982 employment difference.*

3/ *Retirements and deaths (generally 3-5%).*

4/ *Based on estimated 5% (5.25% with compouding) loss annually of total number employed due to job turnover.*

5/ *Data expanded to the universe (coefficient of expansion = 1.429) because IESD data represents only approximately 70% of total employment data.*

6/ *Based on estimated 10% (11.03% with compounding) annual need for updating and retraining supervisors. These supervisors may desire to take only selected courses.*

7/ *Based on 4% (1 supervisor to 24 workers) of total manufacturing work force.*

NOTE: *For a description of the technician and supervisor requirements for all Region 6, see Manpower Report 83-3, dated 22 December 1983, titled "A Manpower Study Justifying the Needs for Purdue Technology Programs in Region 6, and the Anderson, Indiana Area."*

**Some new hires, or persons promoted to first-line supervision, may already possess many of the required skills and qualifications. They may desire to enroll only in selected courses.*

6. EMPLOYMENT PROJECTIONS FOR SUPERVISORS THROUGH 1995 (NATIONAL)

The Bureau of Labor Statistics (BLS) has recently published their occupational projections to 1995. In the BLS report* it was stated: "Employment in jobs requiring a college education or specialized post-secondary technical training are expected to increase significantly." However, many jobs that do not require post-secondary work will also expand.

Pertinent to this report are data in the BLS report which show that the total employment in all occupations is expected to grow about 25% between 1982 and 1985 (using the "moderate trend" scenario in their model). The growth of supervisors of blue collar workers during this same time-period is projected to be 27%; the growth of supervisors of service workers is projected to grow 33%. It should also be noted that the educational level of the population including workforce members, is increasing over time. See table below.

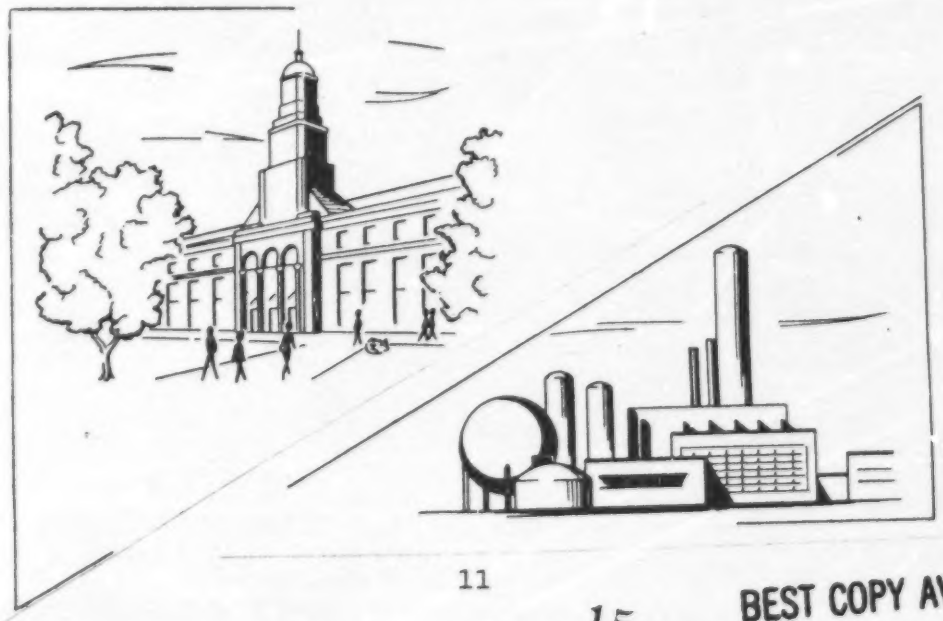
TABLE 7

SELECTED OCCUPATIONAL EMPLOYMENT PROJECTIONS TO 1995*
(NATIONAL)

Occupation	Employment** 1982	Employment** 1995	Percent Change 1982-95
TOTAL, ALL OCCUPATIONS...	101,510	127,110	25%
Supervisors.....	1,443	1,829	27%
Of Blue-Collar Workers.	1,200	1,519	27%
Of Service Workers.....	210	279	33%

*Extracted from MONTHLY LABOR REVIEW, November 1983, Occupational Employment Projections to 1995, U. S. Department of Labor, Bureau of Labor Statistics, Washington, D.C. 20212.

**In 1,000's.



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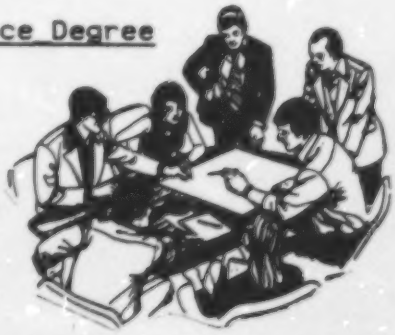
7. DESCRIPTION OF 2 YEAR ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE PROGRAM IN SUPERVISION



Supervision, Associate in Applied Science Degree
(Two Year Program)

This program is designed to meet the needs of people who wish to improve themselves educationally and professionally through the development of basic supervisory skills. The program is designed for students who are employed or who have had previous experience in the workforce. Students may attend on a full-time or part-time basis. Persons who are already in supervisory positions as well as those who desire to equip themselves for upward mobility into supervisory levels are encouraged to enroll in this program.

Students plan a strong individualistic program around their own career goals taking courses equipping them for the technical or specialized aspects field of endeavor. Graduates of the A.A.S. program are eligible to continue toward a B.S. degree in supervision. Credits earned in the A.A.S. can apply to the B.S.

A total of 63 semester credit hours is required to earn the associate degree. The program is made up of three parts: (1) A core of seven courses, totalling 24 credit hours. Every student is required to complete all of these courses. (2) A Specialized Functional Area, pertinent to each student's career goals is identified. Each student must complete at least 15 credit hours in the area selected. (3) Each student also completes 24 credit hours in a Supportive Area. A short description of these three parts, as presented on the Purdue West Lafayette Campus follows:

1. Each student must take or test out of eight core courses, made up as follows:

CORE (24 Credit Hours)

Sem. Hrs.	
3	Human Relations in Supervision
3	Occupational Safety and Health
3	Elements of Supervision
3	Training for Supervisors
3	Industrial Organization or Elements of Production Management
3	English Composition
3	Fundamentals of Speech Communication
3	Algebra and Trigonometry I.

2. Each student must select courses in a Specialized or Technical Functional Area and earn at least 15 semester hours in related courses. These courses provide the student with 15 hours of technical skills and knowledge basic to his/her career choice. The Purdue program counselor must approve the courses prior to taking them. Flexibility is provided to ensure an individualized program.

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Examples of typical Technical or Specialized Areas
(15 Credit Hours)

Accounting
Manufacturing Technology
Construction
Electrical Technology
Health Care
Hospitality
Labor Relations
Marketing
Materials Handling
Mechanical Technology
Office Operations and Automation
Personnel
Production Planning
Quality Control
Retailing
Technical Graphics
Work Methods

3. Each student must also take 24 credit hours from Supportive courses as shown below:

Supportive Area (24 Credit Hours: see division below)

15 Credit Hours must be from the following courses:

3 Algebra and Trigonometry II
3 General Chemistry or other Chem course
3 Physics
3 Introduction to Computers
3 Basic or Fortran Computer Course
3 Statistics for Technology
3 Introductory Accounting
3 Cost Accounting or
Monetary Analysis for Industrial Decisions
3 Technology Graphics
3 Work Methods and Measurement
3 Principles of Economics
3 Supervision and Personnel Problems
3 Labor Relations
(Will also accept certain other courses with program counselor's approval.)

9 Credit Hours may be selected with program counselor's approval from other disciplines such as Psychology, Sociology, English, or additional Technical/Sciences/Engineering courses.

NOTE: *Some supervisors may desire to take only selected courses--perhaps at night, as part-time students. Arrangements can usually be made to meet their needs providing a sufficient number desire the course, and any course pre-requisites (if any) are met. The Purdue program counselors must approve the course in each such instance.*

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8. CONCLUSIONS AND RECOMMENDATIONS

A. Summary and Conclusions

(1) Population: There were 471,100 people living in Region 11 in 1980; this population is projected to decrease nearly 14,000 by the year 2000. The population of Grant County was nearly 81,000 in 1980, and it is projected to decrease about 6,000 by the year 2000. An examination of the age cohort groups in Grant shows a projected decrease of nearly 11,000 younger people (up to age 35) by the year 2000; however, an increase is expected of more than 2,000 in the 35 to 50 age groups. The conclusion is that although there is a net out-migration, Region 6 is a very large region of nearly a half million people, with a growing proportion of middle-aged adults in the workforce.

(2) Educational Attainment: The education attainment levels of adults in Region 6 and Grant County are significantly below State averages. A higher proportion of adults in this region and county have not completed high school, and lower proportions have attended college. For example, fewer than 10% of the adults in this region have one to three years of college--which compares with more than 12% of the State adult population, and only 10.6% have a bachelors or higher degree which compares with 12.5% in the State. (It should be noted that Indiana's adult educational levels are below National averages.) Evidence indicates that lower educational levels are related to lower wages or salaries, higher unemployment, and slower career progression. One concludes that much must be done in Region 6 (and Grant County) to bring adults up to Indiana averages, particularly at the postsecondary levels.

NOTE: Previous research reveals the rank order of "most important reason" people choose a certain college or university is 1) Offers what I want to study, 2) Program is available locally, 3) Good academic reputation, 4) Low tuition, 5+) All other reasons.

(3) Work Force: More than 140,000 employees work in about 7,900 firms in Region 6. The largest employment is in the Manufacturing Division (more than 51,200); about 11,300 of these employees worked in Grant County in diverse manufacturing firms. The next largest division was Services (e.g., Personal, Business, Health, Education and Social Services), wherein 35,600 people worked; about 6,700 of these worked in Grant County. About 20% of the total employment in Region 6 worked in Grant County--in a variety of diversified firms.

(4) Technical and Supervision Training Requirements in Grant County: The largest annual recurring requirement for graduates of 2-year educational programs was found to be in Supervision. Data indicate a base number of the need to hire new or promote up approximately 100 first-line supervisor/foremen-foreladies, plus the need to upgrade or retrain about 50 supervisors now in the workforce. There were lesser requirements for graduates from electrical/electronic engineering technology; draftsmen & numerical control tool programmers; computer programmers and mechanical engineering technicians.

NOTE: The Purdue University Statewide Technology Program is an excellent structure through which necessary program approvals and resources may be obtained and academic & administration activities may be performed.

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(5) Adult Continuing Education: The offering of appropriate educational courses and programs for adults is becoming more important. The significant shift in population to a smaller proportion of young people and a larger proportion of middle-aged workers, the relatively low level of educational attainment of adults are evidences of the need to do more in this area. It is concluded that courses and programs desired by adults which are pertinent to help develop their skills and qualifications should be idenfified and offered locally. They must be academically sound and provided at reasonable rates. Counseling and supportive actions must also be provided. The support of local firms and actions to inform and motivate adults to participate is necessary. Procedures and instruction should accommodate both full-time and part-time students and be available during evening and night-time hours as well as during the day.

(6) Availability of Technical and Supervision Training Programs in the Area Because of the proximity of some technical training programs, consideration of this point is important in planning for new programs in Grant County (city of Marion). The following pertains:

(a) Anderson, Indiana. The Electrical Engineering Technology Program (2-year associate degree) has been approved by Purdue University's Board of Trustees, and is in process of further approval and resource acquisition process. Anderson is about 30 road miles from Marion.

(b) At the IU-Kokomo campus, the following Purdue technology programs are in operation: the associate degree programs for Computer Technology, Electrical Engineering Technology and Mechanical Engineering Technology; the B.S. program in Supervision has been approved but not funded; the B.S. in Electrical Engineering Technology is being considered favorably. Kokomo is about 30 road miles from Marion.

(c) In Muncie, Ball State University offers 2-year associate degree programs in Printing Technology and Manufacturing Technology (the latter is not accredited by the Accreditation Board of Engineering and Technology); also offered are B.S. programs in Industrial Arts Teaching, Cooperative Graphic Arts, Management, and Vocational Teacher in Trades and Industry. Muncie is about 38 road miles from Marion.

(d) In Marion, Marion College, an independent institution, does not offer engineering technology-level instruction nor a degree in supervision. They do have industrial technology, vocational programs in computer programming and electrical fields of study.

(7) Local Advisory Committee: Experience has shown that technical programs designed to meet defined needs are helped considerably through the assistance of local advisory committees. Membership on such committees is made up of representatives from appropriate industries or organizations who have expertise in the instructional field of study and are desirous of helping. The input of such committees begins with the early planning stage, continues through implementation, provision of support, evaluation, and recommendations for improvement. This committee can also participate in long-range planning efforts. A local advisory committee is needed in Marion should this manpower report and related proposal be approved.

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B. Recommendations

(1) Authorization to Implement the Supervision Technology (Two-Year) Associate Degree in the city of Marion (Grant County) It is recommended that approval be requested for the offering of this degree in Marion. Necessary procedures should be established to assure that the quality of instruction and facilities meet Purdue University's Supervision Department standards. The Purdue Statewide Technology Program structure should be used to obtain necessary approvals and resources for implementation.

(2) Adult Continuing Education and Service Courses It is recommended that plans and actions be taken to meet the educational & related support services needs of adults in the city of Marion and in Grant County. Special recruitment, counseling, admissions, remedial academic work, and other activities will undoubtedly be required. Provisions should include matriculation as a candidate for the Supervision Associate Degree, taking selected course-work, and/or participating in workshops or seminars. It is also recommended that class instruction and necessary student support services be provided for both part-time and full-time students, and during evening and night-time as well as daylight hours.

(3) Supervision Technology Advisory Committee An industrial/educational advisory committee should be organized, made up of representatives selected from appropriate industries in Grant County, augmented if necessary by other industrial representatives from Region 6. Major activities of this committee should include:

(a) Student recruitment, selection and counseling,
(b) Instructional program matters,
(c) Teacher assistance,
(d) Awards,
(e) Public relations,
(f) Resource acquisition,
(g) Maintaining liaison with other industry representatives, and
(h) Study of future plans and training needs.

(4) Further Manpower and Training Needs Studies and Plans It is recommended that after the Supervision Program is established as a base of Purdue technology instruction, further manpower and training program needs' studies to meet local and regional needs should be conducted. In this regard, it may be possible to offer the required support and supervision-type courses in Marion, with students taking the engineering technology laboratory-type courses or specialized functional-area courses in the Supervision Program at nearby campuses, such as at IU-Kokomo (Purdue courses), Anderson, or Muncie. Conversely, it may be possible for students in the EET program being planned for Anderson, to receive their supervision-type courses through the Supervision Program at Marion.

The need for qualified supervisors in manufacturing and the myriad of trade and service industries continues to expand. Although there is competition for supervisory jobs, those who posess leadership characteristics and have college training are the most likely to be selected and eventually move up to higher positions. (Principal Source: *Occupational Outlook Handbook.*)

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ATTACHMENT I

LETTERS OF ENDORSEMENT AND SUPPORT IN ESTABLISHING A PURDUE UNIVERSITY PROGRAM IN SUPERVISION IN MARION, INDIANA

	Page
1. Letter from Dana Corporation, Marion, Indiana, dated April 18, 1984.	17
2. Letter from RCA/Video Component & Display Div., Marion, In., dated April 19, 1984.	18
3. Letter from the Manufacturers Council of Marion/Grant County, dated April 25, 1984.	19
4. Letter representing the Marion Community Citizens Advisory Committee, dated 25 April, 1984.	20

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ATTACHMENT I

SPICER UNIVERSAL JOINT DIVISION
P.O. BOX 986 • TOLEDO, OHIO 43696

DANA CORPORATION

PLEASE REPLY TO:
P.O. BOX 500
MARION, INDIANA 46952

April 18, 1984

Mr. Don K. Gentry, Director
Purdue Statewide Technology Program
South Campus Courts, Building B
West Lafayette, IN 47907

SUBJECT: Technical Education Programs in the Marion Community

Dear Mr. Gentry:

I have been asked to make this response because of time constraints placed on Mr. R. E. Artz. So please accept this on behalf of Mr. Artz and the Dana-Marion Plant.

In my opinion these technical programs are necessary and will serve the needs of industry as well as the community.

This type of supervision course has been needed for years. In most manufacturing facilities the hardest workers are promoted to supervision with little or, in most cases, no training. Their only exposure has been how someone else handled different situations. So as the years go by nothing changes. This type of course could at least give the individual a resource box to draw from during the decision making process. It would give the individual different styles or procedures that they had not been exposed to and the end result should be a better qualified candidate for promotion.

One suggestion I would make is somehow insure that the different learning institutions only teach what they now have expertise in. To do otherwise would be ludicrous.

Dana-Marion does endorse and support the efforts put forth to bring these technical programs to the Marion area. We would encourage our employees to participate through Dana's tuition refund program which would pay 75% of all expenses and fees charged.

Sincerely,

James C. Butz

James C. Butz
Industrial Relations Manager

JCB:ds

cc: Mr. R. E. Artz

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RCA | Video Component and Display Division
3301 S. Adams St. | Marion, IN 46952 | Telephone (317) 662-5000

ATTACHMENT I (continued)

RCA

Mr. Don K. Gentry, Director
Purdue Statewide Technology Program
Purdue University
South Campus Courts, Building B
West Lafayette, IN 47907

Dear Mr. Gentry: April 19, 1984

SUBJECT: PURDUE UNIVERSITY - TECHNICAL EDUCATION

In follow-up to your presentation of April 13, regarding Purdue's two-year associate in applied science (AAS) degree program in supervision, RCA endorses your efforts to provide and make available here in the Marion community.

With nearly 100 first-line supervisors at our facility, we feel that locally available education in this field would not only be beneficial to train and prepare future replacements, but also serve as a vehicle to enhance the performance level of our current force, many of whom I would suspect certainly would take advantage of this education program.

Sincerely,

Don R. Rohrabaugh
Administrator, Compensation,
O.D. & Training

DRR/klj

cc: B.D. Brumley
John R. Noblitt - S.C.M.

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SCM OFFICE SUPPLIES GROUP
SCM CORPORATION

2409 W. Second St. Marion, IN 46952 (317) 664-1241

JOHN R. NOBLITT
PRESIDENT

April 25, 1984

Mr. Don K. Gentry, Director
Purdue Statewide Technical Program
South Campus Courts, Bldg. B
West Lafayette, In. 47907

Dear Don,

On April 19, 1984 the Manufacturers Council of Marion/Grant County discussed the potential of Technical Education courses sponsored by Purdue University being offered in the Marion Community. This Council has asked me to express to you their overwhelming support for the installation of technical education programs in the Marion Community.

The Manufacturers Council is made up of the top officials of the manufacturing organizations within the Marion Community and is an organization that meets periodically to discuss matters of mutual concern.

The members present at the meeting expressed their enthusiasm for the way the program is being structured with Purdue University being responsible for those courses of a technical nature and Marion College being responsible for the non-technical aspects of the program. There was also enthusiasm for the structure where an individual may, at his option, pursue an associates degree or may pursue a four year degree if that is his desire.

The Grant County Manufacturers Council pledges their support for these programs and looks forward with enthusiasm to the day when technical education programs will be offered within our community.

Sincerely,

John R. Noblitt
Co-chairman
Grant County Manufacturers Council

JRN:eo

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SCM OFFICE SUPPLIES GROUP
SCM CORPORATION
2409 W. Second St. Marion, IN 46952 (317) 664-1241

JOHN R. NOBLITT
PRESIDENT

April 25, 1984

Mr. Don K. Gentry, Director
Purdue Statewide Technical Program
South Campus Courts, Bldg. B
West Lafayette, In. 47907

Dear Don,

The response to the possibility of Purdue University sponsoring technical education courses in the Marion Community has been outstanding. At this time I have heard from all six of the members of the Citizens Advisory Committee, and have received their overwhelming approval and enthusiasm for the programs as you have outlined them to us. The members of this committee and their association are as follows.

Don Rohrabaugh - RCA
Elmer Tyler - Fisher Body
Dick Harrell - I & M
Jim Butz - Dana Corp.
Rod McMullan - Bell Fibre
Barkley Dwight - Essex

Each of these individuals and their companies believe that there is a strong need in our community to provide high quality technical education for the industrial community. We further support your analysis that first line supervision is the place to start. Supervision is historically the weakest part of an industrial organization and certainly the Marion Community is no exception to that. Like most communities, we tend to promote good operators into supervision without giving them adequate training and preparation for these responsibilities. I know you appreciate the difficulty we have in providing formal education to the supervisors when we are asking them to drive 30 to 60 miles in order to pickup the courses that they would need.

From the standpoint of my own organization, at SCM, we certainly support the effort and will encourage our supervisors to participate. We will also make available the company's tuition refund program to further encourage participation.

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I look forward to continue working with you Don, and the development of these programs. Please let me know how I and my committee may be of further service to you in this effort.

Sincerely,

John R. Noblitt

JRN:eo

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